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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,622	11/29/2001	Malcolm James Grieve	DP-304989 (DEP-0203)	5304
7590	04/20/2004		EXAMINER	
Vincent A. Cichosz Delphi Technologies, Inc. P.O. Box 5052 M/ C 480-410- 202 Troy, MI 48007			LANGEL, WAYNE A	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
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DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 2-13-04 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s),        days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.  | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.       |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-26 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☒ Claims 19-26 are allowed.

4. ☒ Claims 1-18 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other \_\_\_\_\_

EXAMINER'S ACTION

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nataraj et al, for the reasons given in the last Office Action. Applicant's argument, that Nataraj et al is directed to a method of preventing carbon deposition in the reformer, but is silent on a method of removing any carbon deposited in the reformer, is not convincing. Nataraj et al disclose reactions (7), (8) and (9) in column 11 in which the carbon is in equilibrium with CO, hydrogen and the hydrocarbon. It would be obvious from such reactions that carbon could be removed, as well as prevented from being formed, by controlling the reaction feed temperature, composition, and constituents, as suggested at column 12, lines 57-59 of Nataraj et al, since the carbon would react to form CO or the hydrocarbon, which would constitute a "removal" of the carbon. Applicant's argument, that there is no teaching or suggestion in Nataraj et al of increasing a proportion of an oxidant in the gas mixture with any reasonable expectation of success of increasing the temperature of the reformer to a temperature effective to remove contaminant, is not convincing, Nataraj et al clearly teach at col. 12, lines 57-59 and col. 13, lines 4-7 that the presence of oxygen in the reactants and the reactant feed temperature affect the extent of carbon deposition. It would be obvious from such teachings that an increase in oxygen concentration in the reactants would cause an increase in temperature, due to the exothermic reaction between the oxygen and

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hydrocarbon. Accordingly it would not be unexpected that the steps recited in applicant's claim 1 would result in the prevention (or removal) of carbon in the reformer system.

Claims 19-26 are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Wayne Langel at telephone number 571-272-1353.

Wayne Langel  
Primary Examiner  
Art Unit 1754